

6.0 IMPLEMENTATION PLAN

The previous sections of this report have examined the existing and future transportation needs for the MATAPS 2003 study area. These needs were developed based on technical analysis and extensive local citizen and public official input. A transportation plan must be flexible enough to be responsive to the current needs while providing proper guidance to address important long-term transportation system issues. This section of the report concentrates on examining the steps necessary to implement this plan.

6.1 TRANSPORTATION PLAN ADOPTION

The first step in implementing the plan is for all partners to adopt it. By adopting the MATAPS Plan, the partners will establish priorities and guidelines by which future transportation decisions will be made in the Mankato area. Ideally, the plan should be reviewed by all jurisdictions in the study area to ensure that other entities can support the partners in their effort to implement it. The plan should also be publicized to residents and the business community so that they are aware of the opportunities or limitations that it provides. This will enable all affected groups to plan with full knowledge of the partners' transportation goals. In addition to the partners, copies of the plan should be disseminated to cities, townships and public libraries in the area so that it is available to the greatest number of people.

The partners should periodically review the assumptions under which the MATAPS Plan was developed, including estimates of future development, population trends, changing financial resources, and citizen and local government input, and update the plan accordingly. Depending on the speed and degree of change, it is recommended that the plan be reviewed every five years.

6.2 JURISDICTIONAL REALIGNMENT PROCESS

Following the completion of the original MATAPS '96 plan, the partners made a number of the jurisdictional transfer realignments recommended in the plan. These jurisdictional transfers were based on functional classification, system continuity, access control and future traffic volumes. However, there are potential jurisdictional changes that were not made since the completion of the original plan. Some of the potential jurisdictional changes will require additional mileage on the State Aid System. Miles can be added to the State Aid System only as the area grows in population. To plan for some of the future potential changes, the partners should develop a memorandum of understanding (MOU) outlining the process for negotiation the remaining potential jurisdictional changes. The memorandum should address issues such as:

1. Schedule or Timeframe of Proposed Transfers
 - Non-binding schedule (goal) for the jurisdictional transfer of identified routes within the 2025 timeframe.

2. System Issues and Legal Requirements

- The ability to transfer mileage to the state aid system versus local road system (e.g., Screening Board approval is needed to transfer between MSAS and CSAH system on former trunk highway turnback route).
- The receiving agency's ability to use funding from turnback accounts for maintenance and improvements.
- A route that reverts to the township must meet the requirements set forth in Minnesota Statutes, which require a public hearing, completion of repairs or improvements to meet standards for comparable roadway in the town, and continued maintenance for a two-year period before date of revocation.
- Further limitations on establishment, alteration, vacation or revocation of county highways as described in Minnesota Statutes Section 163.11.

3. Planning and Programming Issues

- The allocation of funds that will be available from the transferring agency to the receiving agency.

4. Project Development, Design and Construction Issues

- The process for development of projects, studies, right-of-way acquisition, design and construction of transferred routes.
- The design and construction standards to be used for projects.
- The process and framework for cost-sharing agreements.

5. Operational and Maintenance Issues

- Responsibilities for utility permits, driveway access permits, changes to traffic controls and signing, and level of routine regular maintenance.

Before presenting jurisdictional changes to the State Aid Screen Board for mileage changes, the Partners should develop a comprehensive approach. This will require a review of the entire Blue Earth County system, the Nicollet County system, the Le Sueur County system or any combination depending upon the system changes requested.

6.3 ACCESS MANAGEMENT

Access guidelines are important because they define a starting point for balancing property access, safety and mobility concerns. Transportation agencies regularly receive requests for additional access (e.g., new public streets, commercial driveways, residential and field accesses), which are evaluated by numerous agencies and committees. Because of the number of

individuals and agencies involved, it is easy to have inconsistent application of access policies. This can result in confusion between agencies, developers and property owners, as well as long-term safety and mobility problems. Standard access guidelines can be used to improve communication, enhance safety, and maintain the capacity and mobility of important transportation corridors. In addition, access guidelines may be used to respond to access requests and to promote good access practices such as:

- Aligning access with other existing access points
- Providing adequate spacing to separate and reduce conflicts
- Encouraging indirect access rather than direct access on high-speed, high-volume arterial routes

Providing access management in some form, whether it is through grade-separated crossings, frontage roads or right-in/right-out access, reduces the number of conflicts resulting in improved safety. A number of studies have demonstrated a direct relationship between the number of full access points and the rate of crashes, including FHWA Access Research Report No. FHWA - RD-91-044. Figure 22 shows this relationship.

Public road authorities have been directed by Minnesota State Statutes to provide “reasonable, convenient, and suitable” access to property unless these access rights have been purchased. Courts have interpreted this to:

- Allow restrictions of access to right-in/right-out
- Allow redirection of access to another public roadway that meets the definition of reasonable, convenient and suitable

In special circumstances, broader authority (police power) has been given to public agencies if the situation is deemed to jeopardize public safety. However, this is a very high standard to meet and is seldom used by public agencies.

In addition to the above, land use authorities may exercise additional authority in limiting access through their development rules and regulations. Land use authorities can require:

- Dedication of public rights-of-way
- Construction of public roadways
- Mitigation measures of traffic and/or other impacts
- Changes in and/or development of new access points

These types of access controls are processed through local elected officials (e.g., planning commissions, town boards, City Councils and County Commissions).

Figure 22– Access vs. Crashes

Since stronger land use and access controls are available at the county and city level, and these units of government are usually involved at the planning stages, access guidelines and corridor management practices should be focused at this level. However, the potential long-term benefits of access management require support and good communication at all governmental levels.

In 2002, Mn/DOT finished a multi-year study that developed access policies and access spacing guidelines for the Trunk Highway System. While these spacing guidelines were intended to be used to manage the State Highway System, many of the recommendations could be applied to the city and county systems. The access management guidelines promote coordination between land use and transportation strategies, the same issues that affect decisions on the local city and county level. Establishing the appropriate spacing between public streets and private driveways is an important step toward maintaining the safety and mobility of the traveling public without sacrificing the accessibility needs of local residents.

Upon review of the guidelines, the Partners agreed that they should incorporate them into the new MATAPS study due to the following:

- Based on a comparison of the old and new access spacing criteria, the new guidelines (Mn/DOT) are very similar to the spacing criteria in the previous MATAPS study.
- Interregional Corridor access is specifically defined in Mn/DOT's access management guidelines, whereas they are not addressed in the previous study.
- Mn/DOT recommendations are based on functional classification rather than traffic volumes. Having access recommendations based on future functional classification enables Partners to protect access on roadways before traffic volumes reach specific thresholds. This method also provides partners with a long-term understanding of how the corridor will function and operate.
- The new guidelines have categories that are assigned to specific routes. This eliminates any confusion about what category or access classification is being used.

Table 10 lists the access spacing guidelines for roadways in the MATAPS area. Figure 23 shows the access categories as they have been assigned to the roadway network. As with any policy, there will be a need to deal with special circumstances. Procedures have been developed to address these problems (Appendix D explains the conditions, exceptions and deviations for private access on roadways that are not a part of the trunk highway system). For specific information on private access points along trunk highways, please refer to Mn/DOT's access management guidelines in Technical Memorandum No. 02-10-IM-01.

TABLE 10
Summary of Recommended Access Spacing

| Category | Area or Facility Type | Typical Functional Class | Intersection Spacing | | Signal Spacing | Private Access |
|----------|--|-------------------------------|--|------------------------------------|---|---------------------------------|
| | | | Primary Full Movement Intersection | Conditional Secondary Intersection | | |
| 1 | High Priority Interregional Corridors | | | | | |
| 1F | Freeway | Principal Arterials | Interchange Access Only | | | |
| 1A-F | Full Grade Separation | | Interchange Access Only | | | |
| 1A | Rural, Exurban & Bypass | | 1 mile | 1/2 mile | INTERIM ONLY By Deviation Only | By Deviation Only |
| 2 | Medium Priority Interregional Corridors | | | | | |
| 2A-F | Full Grade Separation | Principal Arterials | Interchange Access Only | | | |
| 2A | Rural, Exurban & Bypass | | 1 mile | 1/2 mile | STRONGLY DISCOURAGED By Deviation Only | By Exception or Deviation Only |
| 2B | Urban Urbanizing | | 1/2 mile | 1/4 mile | STRONGLY DISCOURAGED By Deviation Only | By Exception or Deviation Only |
| 2C | Urban Core | | 300 – 600 feet dependent upon block length | | 1/4 mile | Permitted Subject to Conditions |
| 3 | High Priority Regional Corridors | | | | | |
| 3A-F | Full Grade Separation | Principal and Minor Arterials | Interchange Access Only | | | |
| 3A | Rural, Exurban & Bypass | | 1 mile | 1/2 mile | 1 mile | Permitted Subject to Conditions |
| 3B | Urban Urbanizing | | 1/2 mile | 1/4 mile | 1/2 mile | By Exception or Deviation Only |
| 3C | Urban Core | | 300 – 600 feet dependent upon block length | | 1/4 mile | Permitted Subject to Conditions |
| 4 | Principal Arterials in Primary Trade Centers | | | | | |
| 4A-F | Full Grade Separation | Principal Arterials | Interchange Access Only | | | |
| 4A | Rural, Exurban & Bypass | | 1 mile | 1/2 mile | 1 mile | By Deviation Only |
| 4B | Urban Urbanizing | | 1/2 mile | 1/4 mile | 1/2 mile | By Exception or Deviation Only |
| 4C | Urban Core | | 300 – 600 feet dependent upon block length | | 1/4 mile | Permitted Subject to Conditions |
| 5 | Minor Arterials | | | | | |
| 5A | Rural, Exurban & Bypass | Minor Arterials | 1/2 mile | 1/4 mile | 1/2 mile | Permitted Subject to Conditions |
| 5B | Urban Urbanizing | | 1/4 mile | 1/8 mile | 1/4 mile | By Exception or Deviation Only |
| 5C | Urban Core | | 300 – 600 feet dependent upon block length | | 1/4 mile | Permitted Subject to Conditions |
| 6 | Collectors | | | | | |
| 6A | Rural, Exurban & Bypass | Collectors | 1/2 mile | 1/4 mile | 1/2 mile | Permitted Subject to Conditions |
| 6B | Urban Urbanizing | | 1/8 mile | NA | 1/4 mile | |
| 6C | Urban Core | | 300 – 600 feet dependent upon block length | | 1/8 mile | |
| 7 | Specific Access Plan | | | | | |
| 7 | All | All | By Adopted Plan | | | |

Figure 23 – Access Spacing

The implementation of the guidelines can be done through a number of different methods (e.g., land use regulations, subdivision regulations, access permit processes and access/transportation advisory committees). These processes should be developed so that they can deal with situations that either are outside the guidelines or are hardship cases. In existing corridors where significant development has occurred, the number of existing access points are likely to exceed the access guidelines. Unless these areas are undergoing redevelopment, their access must be addressed or approached differently. The proposed access management strategy in these areas is to aggressively minimize any new accesses while consolidating/reducing existing access points as redevelopment occurs.

It is important to consider the following points when reviewing the guidelines and addressing access issues:

- The guidelines apply primarily to routes with a collector functional classification or above; however, partners may also use the guidelines on some local streets.
- The guidelines should be used as long-term goals, not as absolute rules.
- Maintaining some flexibility is important in promoting access consolidation.
- Approach to implementation is as important as the guidelines themselves.
- Existing physical barriers or constraints need to be considered.

The following access suggestions provide some alternatives for minimizing access and access problems in areas where the guidelines cannot be met:

- **Encourage shared driveways and internal circulation plans:** If indirect access cannot be achieved during plat reviews, promote internal site circulation using shared access points.
- **Restrict turning movements to reduce conflicts:** If access points cannot be eliminated, consider turning movement restrictions (e.g., left-in only or right-in/right-out only) through installation of raised median or other channelization or signing. Eliminating a single turning movement can significantly reduce vehicle conflicts and potential crashes.
- **Develop good parallel street systems for carrying local traffic:** Make sure that important arterial routes have a good parallel street system to provide the local access function and to carry shorter local trips.
- **Develop proper setbacks for future frontage roads:** If frontage roads cannot be justified (benefits do not outweigh costs), make sure that proper building and parking lot setbacks are established so that future frontage roads can be installed with minimal impacts.

- **Develop proper secondary street spacing:** When reviewing plats and new development proposals, be sure that they provide proper intersection spacing for future signals. As a guideline, signalized intersections should be limited depending upon the type of street. Collector streets should provide some continuity and connectivity with other street systems.
- **Encourage proper lot layout to minimize access points:** Promote direct residential access points onto local routes, not arterials or major collectors. Direct residential access to arterial or collector routes can result in complaints when traffic levels increase. In rural areas, where farms have one access point per 40-acre entitlement and where they cluster lots in one portion of the farmstead, access should be encouraged off local roads, not high-speed, high-volume state or county roads.
- **Encourage connectivity between developments:** Individual developments should align streets to provide access to existing developments or reserve right-of-way to provide for future connections to adjacent developments. This promotes neighborhood connectivity, good emergency services and more efficient travel for mail, garbage and bus services, as well as street maintenance activities.
- **Consider Official Map Process for Important Corridors:** Important arterial corridors or future interchange areas that are located in development-prone areas can be protected through an official mapping process. Local agencies should revise zoning ordinances and subdivision regulations to provide for dedication of officially mapped corridors at the time of platting.

6.4 PROJECT DEVELOPMENT AND ENVIRONMENTAL PROCESSES

Implementation of transportation improvements identified in the Plan may require additional public participation and environmental review depending upon the size and type of project. The Mankato and North Mankato area is an environmentally sensitive area due to its location at the confluence of the Blue Earth and Minnesota Rivers. The close proximity to these historic waterways means that the area is rich in cultural resource sites, including prehistoric sites and historic structures. This has resulted in several cultural resource sites being identified and studied for past transportation improvement projects. Because of the high potential for cultural resource sites, attention to possible environmental impacts early in the project development process is recommended to avoid or minimize impacts. If federal funding is involved in a project, then a federal environmental document must be prepared. The type of document depends on the size of the project. If no federal funding is involved, state environmental review requirements may apply. Local ordinances or guidelines could also apply, as well as a variety of local, state and federal permits that regulate wetlands, water quality, air quality, noise and other environmental resources. Early coordination with local and state agencies can reduce delays in the project development process and in acquiring applicable permits.

6.5 RIGHT-OF-WAY PRESERVATION

When future expansion or realignment of a roadway is proposed but not immediately programmed, agencies should consider right-of-way (ROW) preservation strategies that would reduce long-term costs and maintain the feasibility of the proposed improvement. There are several different strategies that can be used to preserve ROW needed for future construction including advance purchase, zoning and subdivision techniques, and official mapping. As part of implementing ROW preservation strategies, local agencies should weigh the risks of proceeding with ROW preservation without environmental documentation. (Note: Mn/DOT policy requires environmental documentation prior to purchase.) If environmental documentation has not been completed, agencies may be taking some risk in preserving a corridor or parcel that has some associated environmental issues.

Direct Purchase

One of the best ways to preserve ROW is to purchase it. However, in most cases agencies do not have the necessary funds to expend for advance ROW and most of the public benefit of purchasing it does not occur until a roadway or transportation facility is built. In addition, many agencies will only proceed with larger projects if they have received environmental clearance (need to have funding identified and/or have significant funds for environmental documentation).

Planning and Zoning Authority

Local agencies have the authority to regulate existing and future land use. Under this authority, agencies have a number of tools that they can use to help preserve right-of-way for transportation projects. These tools include:

Zoning

If the property is in an area that has a very low density (e.g., agricultural district), local agencies should try to maintain this zoning classification. The lower zoning classification will limit the risk for significant development until such time that funding may be available for roadway construction.

Platting and Subdivision Regulations

Local platting and subdivision regulations provide agencies with the authority to fully consider future roadway alignments during the platting process. Before most land is developed, it must be platted. Because cities and counties have the authority to regulate land development, they can influence the plat configuration, including the location of proposed roadways. In most instances, planning and engineering staff work with developers to develop a plat that accommodates the landowners/developers, but also conforms to the long-term community vision and/or plans. In addition, local agencies can require ROW dedication as part of the platting and subdivision process.

Transfer of development Rights

In addition to the above strategies, some agencies have negotiated with property owners to transfer ROW dedication for future roadways for increased development densities on remaining portions of the parcel. This enables the developer to get the same number of lots or units and also enables the agency to obtain the needed ROW.

Official Mapping

A final strategy to preserve ROW is to adopt an Official Map. The Official Map is developed by the local governmental unit by identifying the centerline and ROW needed for a future roadway. The local agency often holds a public hearing showing the location of the future roadway and incorporates the map into their thoroughfare or community facilities plan. The Official Map process allows agencies to control proposed development within the area that is identified, as well as influence development on adjacent parcels. However, if the directly affected property owner requests to develop the property, agencies have six months to initiate acquisition of the property to prevent development of the parcel. If the parcel is not purchased, the owner would be allowed to develop it in conformance with current zoning and subdivision regulations. As a result, the official mapping process should only be used for preserving key corridors in areas that are subject to significant growth pressures. In some cases, official mapping key parcels/corridors may increase the agency's ability to find sources of funds to purchase at-risk parcels.

Additional information on the tools and techniques listed above can be found in Appendix J of Mn/DOT's *Interregional Corridors: A Guide for Plan Development and Corridor Management*. Also included is information on the environmental review and documentation process as it relates to right-of-way preservation.

6.6 INTELLIGENT TRANSPORTATION SYSTEMS (ITS) TECHNOLOGY

The use of Intelligent Transportation Systems (ITS) technology is becoming more streamlined in the management of transportation networks. ITS uses electronic communications equipment and other electronic technologies to improve mobility and safety on roadways. ITS can also be used to mitigate some negative impacts to the environment. In the MATAPS area, an ITS study was conducted by the City of Mankato and Mn/DOT to better coordinate traffic signal progression along TH 22, Madison Avenue, Riverfront Drive, Victory Drive and in the core downtown. In addition to using ITS technology to improve the flow of mainline traffic, ITS technology is being implemented on some signalized intersections to allow emergency response vehicles (ambulances, police, fire trucks, etc.) the option of interrupting the traffic signal cycle so that they can get a "green" light to proceed through the signal. This in turn enables emergency response vehicles to reach their destination more quickly, and possibly save a life that they would not have been able to if they arrived later. Use of ITS technology within the MATAPS area will be increasing once the regional TOCC (transportation operations communication center) is operational.

Study partners should implement ITS technology as a tool to facilitate mobility and safety on the MATAPS roadway network. In addition to the techniques listed above, ITS technology has been used in other areas to manage traffic systems and promote safety in the following ways:

- Use of electronic variable message signs to forewarn drivers of incidents ahead. Information about a crash ahead of the incident allows drivers to divert their trip.

- Use of the Internet to provide drivers with real-time information on existing traffic conditions. Drivers can take alternate routes when they begin their trip to avoid areas with congestion or where an incident has occurred.
- Use of global positioning equipment to guide drivers to their destination (available as an option on some new vehicles).
- Use of radio frequency technology to alert drivers of trains when they cross at-grade roadways.
- Use of global positioning equipment by snowplow drivers to help keep them on course when visibility is poor.

6.7 REGIONAL PRIORITIES AND FINANCING

While a significant part of the study involved developing transportation needs and issues, the Plan also must address how these issues or needs will be prioritized for improvement. This was approached by developing regional priorities for issues and separating the issues into short-term (0 - 6 years), mid-term (6 - 12 years) and long-term (12 - 20 years) timeframes. The timeframes were developed based upon the type of issue, complexity of solution (ability to develop project) and the immediacy of the transportation need.

One of the key questions for any implementation plan is whether the plan can be implemented with available financial resources or whether additional funding will have to be sought to address the identified issues. This was a difficult question to answer for MATAPS because of the following:

- Mn/DOT, Blue Earth County, Nicollet County and Le Sueur County have transportation responsibilities that go beyond the limits of the study. Therefore, these agencies have to weigh transportation priorities and needs developed in the MATAPS study area to other needs and priorities outside of the study area. In addition to needs outside of the area, funding within the area has to go to maintenance and preservation activities, as well as new projects. Therefore, not all of the funding allocated to the MATAPS area will be used for new or expansion projects.
- Many of the projects could involve joint or shared funding. Since cost sharing agreements are normally formalized as part of the project development process, detailed cost distributions could not be estimated.
- The source of funding for projects vary significantly (e.g., federal, state, state aid, county, city, private, bonding, assessments) and the availability of funds has been difficult to determine due to state deficit problems. Because of this, it is difficult to determine the timing of projects.

To address the financial feasibility of the implementation plan, costs for key system and regional expansion projects for the next 20 years were identified. Table 11 identifies the major projects and their associated costs. Figure 24 shows the locations of these projects. It should be noted that the costs are based on previous studies, as well as a cost-per-mile basis. In addition, each agency was asked to review its past funding history within the MATAPS area. The basic assumption was that an agency's historical spending habits¹ within the study area would be similar or, at the minimum, be a good estimate of the amount of funding that each agency could commit to future projects.

The analysis shows significant disparities between the anticipated needs and the 20-year estimated funding revenues that Mn/DOT, Blue Earth County, Le Sueur County, Nicollet County and the City of Mankato could potentially commit to the MATAPS area. The projected revenues did not include private funds that may be contributed to transportation facilities in new development or growth areas where cities can require developers to construct facilities. The contributions of private funds and assessments could reduce a portion of the estimated costs to local government over the 20-year planning period.

Based on the financial feasibility analysis, a large number of the recommendations can be accomplished with the following assumptions:

- Existing funding levels for transportation must keep pace with factors that impact transportation needs and the ability to repair and maintain existing transportation facilities (e.g., vehicle-miles traveled, truck weights and tire pressures, construction costs). This has not been done on a historic basis (costs have increased faster than revenues).
- Public-private partnerships should be considered for every project as a way to fairly distribute construction or reconstruction costs of routes that can be shown to provide improved transportation benefits to selected areas, businesses or both.
- Agencies may have to partner, pool resources and jointly lobby for outside funding assistance to fund costly interchange type projects that could provide significant long-term benefits to the region.
- Additional funding for major system projects is obtained from bonding proposals at the state level.

A detailed implementation plan identifying specific timeframes (short-term, mid-term and long-term) for addressing each of the study issues is shown in Appendix B. Appendix E identifies some of the projects for which concepts and/or layouts have been developed, either through this study or through previous studies. These concepts can be pursued to assist agencies in local decisions that may impact the specific project or area.

¹ Spending habits were limited to capital projects that focused on capacity improvements and/or construction of system improvements (missing linkages and interchanges).

Table 11 – Estimated Costs

Figure 24 – Key project locations